APPENDIX A

A. Comments

AirTouch Communications, Inc. (AirTouch)
Alaskan Choice Television (Alaskan Choice)
American Mobile Telecommunications Association, Inc. (AMTA)
ArrayComm, Inc.
Association for Maximum Service Television, Inc. (MSTV)
Association of America's Public Television Stations (APTS)
Association of Public-Safety Communications Officials-International, Inc. (APCO)
BayCom Inc.
Bruggeman, Jeffrey A.
Consumer Electronics Manufacturers Association (CEMA)
Harris Corporation (Harris)
Houston 2-Way Radio (H2)
Industrial Telecommunications Association, Inc. (ITA)
Intek Global Corp.
International Association of Fire Chiefs, Inc. and International Municipal Signal Association (IAFC/IMSA)
Jones, Charles
Kemp, Edwin, F.
KM Communications, Inc.
Microradio Empowerment Coalition
MRFAC, Inc.
Motorola, Inc.
National Translator Association (NTA)
Northside Plumbing Supply
Palletized Trucking, Inc.
Personal Communications Industry Association, Inc. (PCIA)
Rand McNally & Company
Region 20
Rural Telecommunications Group (RTG)
SBC Communications, Inc. (SBC)
Shure Brothers Inc.
Southern Communications, Inc. (Southern)
Telecommunications Industry Assn. (TIA)
U S WEST, Inc.
U.S. GPS Industry Council (GPS Council)
United Telecom Council (UTC)
Utility Communications, Inc.
Walt Disney Company (TWDC)

B. Reply Comments

AirTouch Communications, Inc.
American Mobile Telecommunications Association, Inc.
ArrayComm, Inc.
Association of American Railroads

Association for Maximum Service Television, Inc. (MSTV)
Association of Public-Safety Communications Officials (APCO)
AT&T Corp.
Bell Atlantic Mobile, Inc. (BAM)
Clearwire Technologies, Inc. (Clearwire)
Consumer Electronics Manufacturers Association (CEMA)
DDI Pocket, Inc.
Fox Ridge Communications, Inc.
Harris Corporation (Harris)
Industrial Telecommunications Association, Inc. (ITA)
International. Inc.
KM Communications, Inc. (KM)
Metricom, Inc.
Motorola, Inc.
National Association of Broadcasters (NAB)
Nextel Communications, Inc. (Nextel)
New York State Technology Enterprise Corporation (NYSTEC)
Public Safety Wireless Network Program (PSWNP)
SBC Communications, Inc. (SBC)
Southern Communications Services, Inc. (Southern)
USA Digital Radio, Inc. (USADR)
US GPS Industry Council (GPS Council)
U S WEST, Inc.
Walt Disney Company (TWDC)

C. Ex Parte Communications and/or Late Filed Comments

Advanced Electronics
Alaska Digital, LLC
All-Com Technologies, Inc.
Allcom Wireless, Inc.
American Mobile Telecommunications Association
APCO International
Arizona Department of Public Safety
ArrayComm, Inc.
Association for Maximum Service Television, Inc.
Associations of Public-Safety Communications Officials-International
AT & T Wireless
Atlanta Communications Company
Bair's Electronics Services, Inc.
BayCom, Inc.
BCI Communications
BearCom
Bell Atlantic
Bell Atlantic Mobile
Blair Communications, Inc.
Boeing Company
Burlington Northern Santa Fe Railway Company
Burst Networks, Inc.

Bytel, Inc.
Canadian Pacific Railway
Cellular Telecommunications Industry Assn. (CTIA)
Centre Communications
Cisco Systems, Inc. (Cisco)
City of Chicago, Office of Emergency Communications-Mr. Donatelli
City of Chicago, Office of Emergency Communications-Mr. Nowakowski
City of El Cajon
City of Fort Lauderdale
City of Mishawaka
City of San Diego
Coastal Electronics, Inc.
Cole, Gordon
Coloma Wireless, LLC
Commercial Communications, LLC
Communications & Electronics, Inc.
Communications Electronics, Inc.
Communications Engineering Services
Consumer Electronics Manufacturers Association
Coosa Valley Communications
County of Charleston
CTI Products, Inc.
DATARADIO
Dataradio Group of Companies
Day Wireless Systems
Delta Radio Systems, Inc.
DFW Communications
Dorler Communications Co.
Douglas County Sheriff
EMCO, Inc.
Express Radio, Inc.
Ford Communications
FreeSpace Communications (FreeSpace)
Greer Communications, Inc
Hankey's Radio, Inc.
Hasty's Communication East, Inc.
Houston 2-Way Radio
Industrial Communications & Electronics LLP
Industrial Telecommunications Association, Inc
Intel Government Affairs
Jackson Communications, Inc
Kay Communications, Inc.
KM Communications, Inc.
Leap Wireless International Inc.
Lucent Technologies (Lucent)
Macon Communications, Inc.
Maryland State Police
Mashantucket Pequot Tribal Nation
Maximum Service Television, Inc.

McCord Communications
McDermott Communications Co., Inc.
Metropolitan Communications
Microradio Empowerment Coalition
Microsoft Corporation (Microsoft)
Mobex Communications, Inc.
Mobilcomm
Mobile Communications of Gwinnett, Inc.
Motorola, Inc.
MRFAC, Inc.
National Coordination Committee on Public Safety Spectrum (NCC)
National Telecommunications and Information Administration (NTIA)
Nex-Tech
Nextel Communications, Inc. (Nextel)
North Carolina Smartnet Users Network
North County Dispatch J.P.A.
Office of Emergency Management
Ohio Valley 2-Way Radio, Inc.
P&R Communications, Inc.
PCT Communications
Personal Communications Industry Association (PCIA)
Platte Valley Communications
PSINet
Puget Sound Instrument
QualComm Inc.
Regional Communications, Inc.
Rep. Bliley
Rural Telecommunications Group (RTG)
S&P Communications
Savannah Communications
SBC Wireless, Inc.
Senator Dorgan et al.
Sierra Electronics
Southern Communications Services, Inc. (Southern)
Spectrum
Spectrum Exchange
Supreme Radio Communications, Inc.
Talladega County Emergency Management Agency
TBA Communications, Inc.
Telcordia Technologies, Inc. (Telcordia)
Telephone and Data Systems, Inc. et al. (TDS)
Teletouch Communications, Inc.
Texas Communications
Two Way Radio Services, Inc.
U.S. West Wireless, LLC
Union Pacific Railroad Company
University of Maryland
Walt Disney Company
Western Communications

Whitten's 2-Way Services
Yahoo! Inc.

Appendix B

FINAL RULES

For those reasons discussed in the accompanying Order part 27 of Title 47 of the Code of Federal Regulations is amended as follows:

1. The authority citation for part 27 is revised to read as follows:
Authority: 47 U.S.C. 154, 301, 302, 303, 307, 309, 332, 336, and 337 unless otherwise noted.

PART 27 — WIRELESS COMMUNICATIONS SERVICE

2. The title for part 27 is amended to read as follows:

PART 27 – MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

3. The table of contents for part 27 is amended by adding a Sec. 27.10 at the beginning of subpart B, by adding Secs. 27.60 and 27.66 to subpart C, by amending the titles for subpart D and for Sec. 27.201, and by adding subpart F as follows:

PART 27 – MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

* * * * *

Subpart B -- Applications and Licenses

Sec.
27.10 Regulatory Status.

* * * * *

Subpart C – Technical Standards

* * * * *

Sec.
27.60 TV/DTV interference protection criteria.

* * * * *

27.66 Discontinuance, reduction, or impairment of service.

Subpart D -- Competitive Bidding Procedures for the
2305-2320 MHz and 2345-2360 MHz Bands

Sec.
27.201 2305-2320 MHz and 2345-2360 MHz bands subject to competitive bidding.

* * * * *

Subpart F -- Competitive Bidding Procedures for the
747-762 MHz and 777-792 MHz Bands

Sec.

27.501 747-762 MHz and 777-792 MHz bands subject to competitive bidding.
27.502 Designated entities.

4. Section 27.1 is amended in paragraph (a) by deleting the phrase "for the Wireless Communications Service (WCS)" and substituting the phrase "for miscellaneous wireless communications services (WCS)" in lieu thereof, and by revising paragraph (b) to read as follows:

§ 27.1 Basis and purpose.

* * * * *

(b) Purpose. This part states the conditions under which spectrum is made available and licensed for the provision of wireless communications services in the following bands.
(1) 2305-2320 MHz and 2345-2360 MHz.
(2) 747-762 MHz and 777-792 MHz.

* * * * *

5. Section 27.2 is amended to read as follows:

§ 27.2 Permissible communications.

(a) Miscellaneous wireless communications services. Subject to technical and other rules contained in this part, a licensee in the frequency bands specified in § 27.5 of this part may provide any services for which its frequency bands are allocated, as set forth in the non-Federal Government column of the Table of Allocations in § 2.106 of part 2 of this chapter (column 5).

(b) Satellite DARS. Satellite digital audio radio service (DARS) may be provided using the 2310-2320 and 2345-2360 MHz bands. Satellite DARS service shall be provided in a manner consistent with part 25 of this chapter.

6. Section 27.3 is amended by redesignating paragraph (e) as paragraph (f) and paragraphs (f), (g), and (h) as paragraphs (k), (l), and (m), respectively, and by adding new paragraphs (e), (g), (h), (i), (j) and (n) to read as follows:

§ 27.3 Other applicable rule parts.

* * * * *

(e) Part 15. This part sets forth the requirements and conditions applicable to certain radio frequency devices.
* * * * *
(g) Part 20. This part sets forth the requirements and conditions applicable to commercial mobile radio service providers.
(h) Part 21. This part sets forth rules the requirements and conditions applicable to point-to-point microwave services relating to communications common carriers.
(i) Part 22. This part sets forth the requirements and conditions applicable to public mobile services.
(j) Part 24. This part sets forth the requirements and conditions applicable to personal communications services.

* * * * *

(n) Part 101. This part sets forth the requirements and conditions applicable to fixed microwave services.

7. Section 27.4 is amended by revising the definition of ``wireless communications service" and by adding a definition of "broadcast services" in alphabetical order to read as follows:

§ 27.4 Terms and definitions.

* * * * *

Broadcast services. ***This term shall have the same meaning as that for "broadcasting" in section 3(6) of the Communications Act of 1934, i.e., "the dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations." 47 U.S.C. § 153(6).***

* * * * *

Wireless communications service. A radiocommunication service licensed pursuant to this part for the frequency bands specified in § 27.5.

8. Section 27.5 is amended by redesignating the introductory text as paragraph (a) and paragraphs (a) and (b) as paragraphs (a)(1) and (a)(2), respectively, by inserting the title "2305-2320 MHz and 2345-2360 MHz bands" at the beginning and then adding the phrase "in the 2305-2320 MHz and 2345-2360 MHz bands" at the end of newly-designated paragraph (a), and by adding a new paragraph (b) to read as follows:

§ 27.5 Frequencies.

* * * *

(b) 746-764 MHz and 776-794 MHz bands. The following frequencies are available for licensing pursuant to this part in the 746-764 MHz and 776-794 MHz bands:
(1) Two paired channels of 1 megahertz each are available for assignment. Block A: 746-747 MHz and 776-777 MHz.
(2) Two paired channels of 2 megahertz each are available for assignment. Block B: 762-764 MHz and 792-794 MHz.
(3) Two paired channels of 5 megahertz each are available for assignment. Block C: 747-752 MHz and 777-782 MHz.
(4) Two paired channels of 10 megahertz each are available for assignment. Block D: 752-762 MHz and 782-792 MHz.

9. Section 27.6 is amended by redesignating the introductory text as paragraph (a) and paragraphs (a) and (b) as paragraphs (a)(1) and (a)(2), respectively, by inserting the title "2305-2320 MHz and 2345-2360 MHz bands" at the beginning and then adding the phrase "for the 2305-2320 MHz and 2345-2360 MHz bands" between the words "areas" and "are" in the first sentence of newly-designated paragraph (a), and by adding a new paragraph (b) to read as follows:

§ 27.6 Service areas.

* * * * *

(b) 746-764 MHz and 776-794 MHz bands.
(1)[Reserved.]
(2) Service areas for Blocks C and D in the 747-762 MHz and 777-792 MHz bands are based on Economic Area Groupings (EAGs) as defined by the Federal Communications Commission. *See* 62 FR

15978 (April 3, 1997) extended with the Gulf of Mexico. *See also* 62 FR 9636 (March 3, 1997), in which the Commission created an additional four economic area-like areas for a total of 176. Maps of the EAGs and the FEDERAL REGISTER Notice that established the 172 Economic Areas (EAs) are available for public inspection and copying at the Reference Center, Room CY A-257, 445 12th St., S.W., Washington, DC 20554. These maps and data are also available on the FCC website at www.fcc.gov/oet/info/maps/areas/.

(i)There are 6 EAGs, which are composed of multiple EAs as defined in the table below:

Economic Area Groupings[1]	Name	Economic Areas[2]
EAG001	Northeast	1-11, 54
EAG002	Mid-Atlantic	12-26, 41, 42, 44-53, 70
EAG003	Southeast	27-40, 43, 69, 71-86, 88-90, 95, 96, 174, 176(part)
EAG004	Great Lakes	55-68, 97, 100-109
EAG005	Central/Mountain	87, 91-94, 98, 99, 110-146, 148, 149, 152, 154-159, 176(part)
EAG006	Pacific	147, 150, 151, 153, 160-173, 175

Note 1: Economic Area Groupings are defined by the Federal Communications Commission; *see* 62 FR 15978 (April 3, 1997) extended with the Gulf of Mexico.

Note 2: Economic Areas are defined by the Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce February 1995 and extended by the Federal Communications Commission, *see* 62 FR 9636 (March 3, 1997).

(ii) For purposes of paragraph (b)(2)(i) of this section, EA 176 (the Gulf of Mexico) will be divided between EAG003 (the Southeast EAG) and EAG005 (the Central/Mountain EAG) in accordance with the configuration of the Eastern/ Central and Western Planning Area established by the Mineral Management Services Bureau of the Department of Interior (MMS). That portion of EA 176 contained in the Eastern and Central Planning Areas as defined by MMS will be included in EAG003; that portion of EA 176 contained in the Western Planning Area as defined by MMS will be included in EAG005. Maps of these areas may be found on the MMS website. www.gomr.mms.gov/homepg/offshore/offshore.html.

10. A new section 27.10 is added at the beginning of subpart B to read as follows:

§ 27.10 Regulatory status.

(a) Single authorization. Authorization will be granted to provide any or a combination of the following services in a single license: common carrier, non-common carrier, and broadcast. A licensee may render any kind of communications service consistent with the regulatory status in its license and with the Commission's rules applicable to that service. An applicant or licensee may submit a petition at any time requesting clarification of the regulatory status for which authorization is required to provide a specific communications service.

(b) Designation of regulatory status in initial application. An applicant shall specify in its initial application if it is requesting authorization to provide common carrier, non-common carrier, or broadcast

services, or a combination thereof.

(c) Amendment of pending applications. The following rules apply to amendments of a pending application.
(1) Any pending application may be amended to:
(i) Change the carrier regulatory status requested, or
(ii) Add to the pending request in order to obtain common carrier, non-common carrier, or broadcast status, or a combination thereof, in a single license.
(2) Amendments to change, or add to, the carrier regulatory status in a pending application are minor amendments filed under § 1.927 of part 1 of this chapter.

(d) Modification of license. The following rules apply to amendments of a license.
(1) A licensee may modify a license to:
(i) Change the regulatory status authorized, or
(ii) Add to the status authorized in order to obtain a combination of services of different regulatory status in a single license.
(2) Applications to change, or add to, the carrier status in a license are modifications not requiring prior Commission authorization. The licensee must notify the Commission within 30 days of the change. If the change results in the discontinuance, reduction, or impairment of an existing service, the licensee is subject to the provisions of § 27.66 of this part.

11. Section 27.11 is amended by adding the following sentences to the end of paragraph (a), by revising paragraph (b), and by adding a new paragraph (c) to read as follows:

§ 27.11 Initial authorization.

(a) * * * Initial authorizations shall be granted in accordance with § 27.5 of this part. Applications for individual sites are not required and will not be accepted, except where required for environmental assessments, in accordance with §§ 1.1301 through 1.1319 of part 1 of this chapter.

(b) 2305-2320 MHz and 2345-2360 MHz bands. Initial authorizations for the 2305-2320 MHz and 2345-2360 MHz bands shall be for 10 megahertz of spectrum in accordance with § 27.5(a) of this part.
(1) Authorizations for Blocks A and B will be based on Major Economic Areas (MEAs), as specified in § 27.6(a)(1) of this part.
(2) Authorizations for Blocks C and D will be based on Regional Economic Area Groupings (REAGs), as specified in § 27.6(a)(2) of this part.

(c) 746-764 MHz and 776-794 MHz bands. Initial authorizations for the 746-764 MHz and 776-794 MHz blocks shall be for 1, 2, 5, or 10 megahertz of spectrum in accordance with § 27.5(b) of this part.
(1) Authorizations for Block A, consisting of two paired channels of 1 megahertz each, will be based on those geographic areas specified in § 27.6(b)(1) of this part.
(2) Authorizations for Block B, consisting of two paired channels of 2 megahertz each, will be based on those geographic areas specified in § 27.6(b)(1) of this part.
(3) Authorizations for Block C, consisting of two paired channels of 5 megahertz each, will be based on Economic Area Groupings (EAGs), as specified in § 27.6(b)(2) of this part.
(4) Authorizations for Block D, consisting of two paired channels of 10 megahertz each, will be based on EAGs, as specified in § 27.6(b)(2) of this part.

13. Section 27.13 is amended by designating the present text as paragraph (a), by inserting the title

"2305-2320 MHz and 2345-2360 MHz bands" and then the phrase "Except as provided in paragraph (b)" at the beginning thereof, and by adding a new paragraph (b) to read as follows:

§ 27.13 License Period.

* * * * *

(b) 746-764 MHz and 776-794 MHz bands. Initial authorizations for the 746-764 MHz and 776-790 MHz bands, will extend until January 1, 2014, except that a Part 27 licensee commencing broadcast services, will be required to seek renewal of its license for such services at the termination of the eight-year term following commencement of such operations.

14. Section 27.14 is amended by deleting the phrase "ten years of being licensed" in paragraph (a) and substituting the phrase "the prescribed license term set forth in § 27.13 of this part" in lieu thereof.

15. Section 27.15 is amended by revising paragraph (b)(4) and adding a new paragraph (e) to read as follows:

§ 27.15 Geographic partitioning and spectrum disaggregation.

* * * * *

(b) Technical Standards.

* * * * *

(4) Signal levels. For purposes of partitioning and disaggregation, Part 27 systems must be designed so as not to exceed the signal level specified for the particular spectrum block in § 27.55 of this part at the licensee's service area boundary, unless the affected adjacent service area licensees have agreed to a different signal level.

* * * * *

(e) Compliance with construction requirements. The following rules apply for purposes of implementing the construction requirements set forth in § 27.14 of this part.

(1) Partitioning. Parties to partitioning agreements have two options for satisfying the construction requirements set forth in § 27.14 of this part. Under the first option, the partitioner and partitionee each certifies that it will independently satisfy the substantial service requirement for its respective partitioned area. If a licensee subsequently fails to meet its substantial service requirement, its license will be subject to automatic cancellation without further Commission action. Under the second option, the partitioner certifies that it has met or will meet the substantial service requirement for the entire, pre-partitioned geographic service area. If the partitioner subsequently fails to meet its substantial service requirement, only its license will be subject to automatic cancellation without further Commission action.

(2) Disaggregation. Parties to disaggregation agreements have two options for satisfying the construction requirements set forth in § 27.14 of this part. Under the first option, the disaggregator and disaggregatee each certifies that it will share responsibility for meeting the substantial service requirement for the geographic service area. If the parties choose this option and either party subsequently fails to satisfy its substantial service responsibility, both parties' licenses will be subject to forfeiture without further Commission action. Under the second option, both parties certify either that the disaggregator or the disaggregatee will meet the substantial service requirement for the geographic service area. If the parties choose this option, and the party responsible subsequently fails to meet the substantial service requirement, only that party's license will be subject to forfeiture without further Commission action.

16. Section 27.50 is amended by redesignating paragraphs (a) and (b) as paragraphs (b)(1) and (b)(2), respectively, deleting in both of these redesignated paragraphs the phrase "in the 2305-2320 MHz and 2345-2360 MHz bands," by adding new paragraphs (a) and (b), and by adding Table 1 following paragraph (c) to read as follows:

§ 27.50 Power and antenna height limits.

(a) The following power and antenna height limits apply to transmitters operating in the 747-762 MHz and 777-792 MHz bands:
(1) Fixed and base stations transmitting in the 747-762 MHz band must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT), except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section;
(2) Fixed, control, and mobile stations transmitting in the 777-792 MHz band are limited to 30 watts ERP;
(3) Portable stations (hand-held devices) transmitting in the 777-792 MHz band are limited to 3 watts ERP;
(4) Maximum composite transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of RMS-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, etc., so as to obtain a true maximum composite measurement for the emission in question over the full bandwidth of the channel.

(b) The following power limits apply to the 2305-2320 MHz and 2345-2360 MHz bands.

* * * * *

(c) * * *

Table 1 – Permissible Power and Antenna Heights for Base and Fixed Stations in the 747-762 MHz Band

Antenna Height (AAT) in meters (feet)	Effective Radiated Power (ERP) (watts)
Above 1372 (4500)	65
Above 1220 (4000) to 1372 (4500)	70
Above 1067 (3500) to 1220 (4000)	75
Above 915 (3000) to 1067 (4000)	100
Above 763 (2500) to 915 (3000)	140

Above 610 (2000) to 763 (2500)	200
Above 458 (1500) to 610 (2000)	350
Above 305 (1000) to 458 (1500)	600
Up to 305 (1000)	1000

17. Section 27.51 is revised to read as follows:

§ 27.51 Equipment authorization.

(a) Each transmitter utilized for operation under this part must be of a type that has been authorized by the Commission under its certification procedure.

(b) Any manufacturer of radio transmitting equipment to be used in these services may request equipment authorization following the procedures set forth in subpart J of part 2 of this chapter. Equipment authorization for an individual transmitter may be requested by an applicant for a station authorization by following the procedures set forth in part 2 of this chapter.

18. Section 27.53 is amended by revising paragraph (a), redesignating paragraph (c) as paragraph (f), and adding new paragraphs (c), (d) and (e) to read as follows:

§ 27.53 Emission limits.

(a) For operations in the bands 2305-2320 MHz and 2345-2360 MHz, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by the following amounts:

* * * * *

(c) For operations in the 747 to 762 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On any frequency outside the 747 to 762 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On all frequencies between 764 to 776 MHz and 794 to 806 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment;
(3) Compliance with the provisions of paragraph (c)(1) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
(4) Compliance with the provisions of paragraph (c)(2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(d) For operations in the 777 to 792 MHz band, the power of any emission outside the licensee's frequency band(s)of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On any frequency outside the 777 to 792 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On all frequencies between 764 to 776 MHz and 794 to 806 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations transmitting in the 777 to 792 MHz band;
(3) On all frequencies between 764 to 776 MHz and 794 to 806 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for fixed stations transmitting in the 777 to 792 MHz band;
(4) Compliance with the provisions of paragraph (d)(1) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
(5) Compliance with the provisions of paragraphs (d)(2) and (d)(3) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(e) For operations in the 747-762 MHz and 777-792 MHz bands, emissions in the band 1559-1610 MHz shall be limited to –70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and –80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

(f) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

19. Section 27.55 is amended to read as follows.

§ 27.55 Field strength limits.

The predicted or measured median field strength at any location on the geographical border of a Part 27 service area shall not exceed the value specified for the following bands, unless the adjacent affected service area licensees agree to a different field strength. This value applies to both the initially offered service areas and to partitioned service areas.

(a) 2305-2320 and 2345-2360 MHz bands: 47 dBuV/m
(b) 747-762 and 777-792 MHz bands: 40 dBuV/m

20. Section 27.60 is added to read as follows.

§ 27.60 TV/DTV interference protection criteria.

Base, fixed, control, and mobile transmitters in the 747-762 MHz and 777-792 MHz frequency bands must be operated only in accordance with the rules in this section to reduce the potential for interference to public reception of the signals of existing TV and DTV broadcast stations transmitting on TV Channels 59 through 68.

(a) D/U ratios. Licensees must choose site locations that are a sufficient distance from co-channel and

adjacent channel TV and DTV stations, and/or must use reduced transmitting power or transmitting antenna height such that the following minimum desired signal-to-undesired signal ratios (D/U ratios) are met.
(1) The minimum D/U ratio for co-channel stations is 40 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers (55 miles)) of the TV station or 17 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers (55 miles)) of the DTV station.
(2) The minimum D/U ratio for adjacent channel stations is 0 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers (55 miles)) of the TV station or -23 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers (55 miles)) of the DTV station.

(b) TV stations and calculation of contours. The methods used to calculate TV contours and antenna heights above average terrain are given in §§ 73.683 and 73.684 of this chapter. Tables to determine the necessary minimum distance from the 747-762 MHz or 777-792 MHz station to the TV/DTV station, assuming that the TV/DTV station has a hypothetical or equivalent Grade B contour of 88.5 kilometers (55 miles), are located in § 90.309 and labeled as Tables B, D, and E. Values between those given in the tables may be determined by linear interpolation. The locations of existing and proposed TV/DTV stations during the period of transition from analog to digital TV service are given in Part 73 of this chapter and in the final proceedings of MM Docket No. 87-268. The DTV allotments on Channels 60 through 68 are:

STATE	CITY	NTSC TV Ch.	DTV Ch.	ERP (kW)	HAAT (m.)
California	Concord	42	63	61	856
California	Long Beach	18	61	413.6	725
California	Los Angeles	2	60	865.9	1107
California	Los Angeles	11	65	688.7	896
California	Los Angeles	13	66	679.7	899
California	Riverside	62	68	180.1	723
California	Sacramento	10	61	1000	595
California	Stockton	64	62	63.5	874
New Jersey	Newark	13	61	198.7	500
New Jersey	Vineland	65	66	107.8	280
Pennsylvania	Allentown	39	62	50	302
Pennsylvania	Philadelphia	6	64	1000	332
Pennsylvania	Philadelphia	10	67	791.8	354
Puerto Rico	Aguada	50	62	50.1	343
Puerto Rico	Arecibo	60	61	55	242
Puerto Rico	Mayaguez	16	63	50.1	347
Puerto Rico	Naranjito	64	65	50.1	142
Puerto Rico	Ponce	7	66	407.4	826
Wisconsin	Milwaukee	18	61	519.8	307

DTV stations on Channel 59 must be considered even though they are not indicated in the above table. The transition period is scheduled to end on December 31, 2006. After that time, unless otherwise directed by the Commission, 747-762 MHz and 777-792 MHz stations will no longer be required to protect reception of co-channel or adjacent channel TV/DTV stations.

(1) Licensees of stations operating within the ERP and HAAT limits of § 27.50 of this part must select one of three methods to meet the TV/DTV protection requirements, subject to Commission approval:
(i) utilize the geographic separation specified in the tables referenced below;
(ii) submit an engineering study justifying the proposed separations based on the actual parameters of the land mobile station and the actual parameters of the TV/DTV station(s) it is trying to protect; or,

(iii) obtain written concurrence from the applicable TV/DTV station(s). If this method is chosen, a copy of the agreement must be submitted with the application.
(2) The following is the method for geographic separations.
(i) Base and fixed stations that operate in the 747-762 MHz band having an antenna height (HAAT) less than 152 m. (500 ft.) shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table B (co-channel frequencies based on 40 dB protection) and Table E (adjacent channel frequencies based on 0 dB protection) in § 90.309 of this chapter. For base and fixed stations having an antenna height (HAAT) between 152-914 meters (500-3,000 ft.) the effective radiated power must be reduced below 1 kilowatt in accordance with the values shown in the power reduction graph in Figure B in § 90.309 of this chapter. For heights of more than 152 m. (500 ft.) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the hypothetical or equivalent Grade B contour of a co-channel TV/DTV station (*i.e.*, it exceeds the distance from the appropriate Table in § 90.309 to the relevant TV/DTV station), an authorization will not be granted unless it can be shown in an engineering study (*see* paragraph (b)(1)(ii) of this section) that actual terrain considerations are such as to provide the desired protection at the actual Grade B contour (64 dBμV/m for TV and 41 dBμV/m for DTV stations) or unless the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the actual Grade B contour (64 dBμV/m for TV and 41 dBμV/m coverage contour for DTV stations) will be achieved. Directions for calculating powers, heights, and reduction curves are listed in § 90.309 for land mobile stations. Directions for calculating coverage contours are listed in §§ 73.683-685 for TV stations and in § 73.625 for DTV stations.
(ii) Control, fixed, and mobile stations (including portables) that operate in the 777-792 MHz band are limited in height and power and therefore shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table D (co-channel frequencies based on 40 dB protection for TV stations and 17 dB for DTV stations) in § 90.309 of this chapter and a minimum distance of 8 kilometers (5 miles) from all adjacent channel TV/DTV station hypothetical or equivalent Grade B contours (adjacent channel frequencies based on 0 dB protection for TV stations and - 23 dB for DTV stations). Since control, fixed, and mobile stations may affect different TV/DTV stations than the associated base or fixed station, particular care must be taken by applicants/licensees to ensure that all appropriate TV/DTV stations are considered (*e.g.* a base station may be operating within TV Channel 62 and the mobiles within TV Channel 67, in which case TV Channels 61, 62, 63, 66, 67 and 68 must be protected). Control, fixed, and mobile stations shall keep a minimum distance of 96.5 kilometers (60 miles) from all adjacent channel TV/DTV stations. Since mobiles and portables are able to move and communicate with each other, licensees must determine the areas where the mobiles can and cannot roam in order to protect the TV/DTV stations.
(iii) In order to protect certain TV/DTV stations and to ensure protection from these stations which may have extremely large contours due to unusual height situations, an additional distance factor must be used by all base, fixed, control, and mobile stations. For all co-channel and adjacent channel TV/DTV stations which have an HAAT between 350 and 600 meters, licensees must add the following DISTANCE FACTOR to the value obtained from the referenced Tables in § 90.309 and to the distance for control, fixed, and mobile stations on adjacent TV/DTV channels (96.5 km).

> DISTANCE FACTOR = (TV/DTV HAAT - 350) ÷ 14 in kilometers, where HAAT is the TV or DTV station antenna height above average terrain obtained from its authorized or proposed facilities, whichever is greater.

For all co-channel and adjacent channel TV/DTV stations which have an antenna height above average terrain greater than 600 meters, licensees must add 18 kilometers as the DISTANCE FACTOR to the value obtained from the referenced Tables in § 90.309 and to the distance for control, fixed, and mobile stations on adjacent TV/DTV channels (96.5 km).

Note: The 88.5 km (55 mi) Grade B service contour (64 dBμV/m) is based on a hypothetical TV station

operating at an effective radiated power of one megawatt, a transmitting antenna height above average terrain of 610 meters (2000 feet) and the Commission's R-6602 F(50,50) curves. *See* § 73.699 of this chapter. Maximum facilities for TV stations operating in the UHF band are 5 megawatts effective radiated power at an antenna HAAT of 610 meters (2,000 feet). *See* § 73.614 of this chapter. The equivalent contour for DTV stations is based on a 41 dBμV/m signal strength and the distance to the F(50,90) curve. *See* § 73.625 of this chapter.

21. A new section 27.66 is added to read as follows:

§ 27.66 Discontinuance, reduction, or impairment of service.

(a) Involuntary act. If the service provided by a fixed common carrier licensee is involuntarily discontinued, reduced, or impaired for a period exceeding 48 hours, the licensee must promptly notify the Commission, in writing, as to the reasons for discontinuance, reduction, or impairment of service, including a statement when normal service is to be resumed. When normal service is resumed, the licensee must promptly notify the Commission.

(b) Voluntary act by common carrier. If a fixed common carrier licensee voluntarily discontinues, reduces, or impairs service to a community or part of a community, it must obtain prior authorization as provided under § 63.71 of this chapter. An application will be granted within 30 days after filing if no objections have been received.

(c) Voluntary act by non-common carrier. If a fixed non-common carrier licensee voluntarily discontinues, reduces, or impairs service to a community or part of a community, it must given written notice to the Commission within seven days.

(d) Notifications and requests. Notifications and requests identified in paragraphs(a) through (c) of this section should be sent to: Federal Communications Commission, Common Carrier Radio Services, 1270 Fairfield Road, Gettysburg, Pennsylvania, 17325.

22. Section 27.308 is amended by deleting the phrase "WCS (see subparts C and D of this part as appropriate)" and inserting the phrase "applicable frequency band (*see* subparts C, D, and F of this part, as appropriate)" in lieu thereof.

23. A new subpart F is added to read as follows.

Subpart F – Competitive Bidding Procedures for the 747-762 MHz and 777-792 MHz Bands.

§ 27.501 747-762 MHz and 777-792 MHz bands subject to competitive bidding.

Mutually exclusive initial applications for licenses in the 747-762 MHz and 777-792 MHz bands are subject to competitive bidding procedures. The procedures set forth in part 1, subpart Q, of this chapter will apply unless otherwise provided in this part.

§ 27.502 Designated entities.

(a) Eligibility for small business provisions.
(1) A small business is an entity that, together with its controlling interests and affiliates, has average gross revenues not exceeding $40 million for the preceding three years.
(2) A very small business is an entity that, together with its controlling interests and affiliates, has

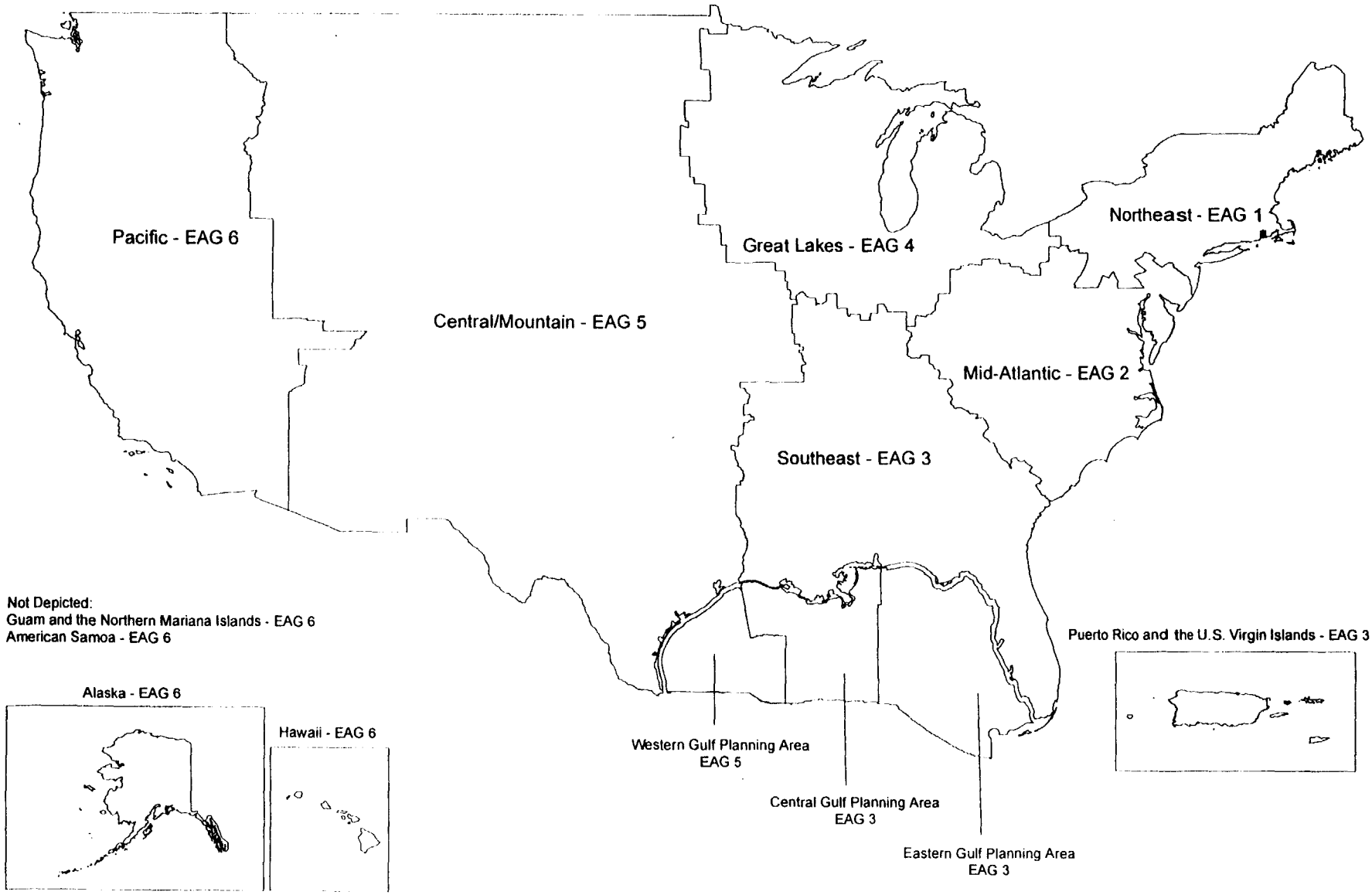
average gross revenues not exceeding $15 million for the preceding three years.
(3) For purposes of determining whether an entity meets either of the definitions set forth in paragraphs (a)(1) and (a)(2) of this section, the gross revenues of the entity, its controlling interests and affiliates shall be considered on a cumulative basis and aggregated. An applicant seeking status as a small business or very small business under this section must disclose on its short- and long-form applications, separately and in the aggregate, the gross revenues of the applicant (or licensee), its controlling interests and affiliates for each of the previous three years.
(4) Persons or entities that hold interests in an applicant (or licensee) that are affiliates of each other or have an identity of interests identified in § 1.2110(b)(4)(iii) of this chapter will be treated as though they were one person or entity and their ownership interests aggregated for purposes of determining an applicant's (or licensee's) compliance with the requirements of this section.
(5) Where an applicant (or licensee) cannot identify controlling interests under the standards set forth in this section, the gross revenues of all interest holders in the applicant, and their affiliates, will be attributable.
(6) A consortium of small businesses (or a consortium of very small businesses) is a conglomerate organization formed as a joint venture between or among mutually independent business firms, each of which individually satisfies the definition in paragraph (a)(1) of this section (or each of which individually satisfies the definition in paragraph (a)(2) of this section). Where an applicant or licensee is a consortium of small businesses (or very small businesses), the gross revenues of each small business (or very small business) shall not be aggregated.
(7) Designated entities must describe on their long-form applications how they satisfy the requirements for eligibility for designated entity status, and must list and summarize on their long-form applications all agreements that affect designated entity status such as partnership agreements, shareholder agreements, management agreements and other agreements, including oral agreements, establishing, as applicable, *de facto* or *de jure* control of the entity. Such information must be maintained at the licensee's facilities or by its designated agent for the term of the license in order to enable the Commission to audit designated entity eligibility on an ongoing basis.

(b) Controlling interest.
(1) For purposes of this section, a controlling interest includes individuals or entities with either *de jure* or *de facto* control of the applicant. *De jure* control is evidenced by holdings of greater than 50 percent of the voting stock of a corporation, or in the case of a partnership, general partnership interests. *De facto* control is determined on a case-by-case basis. An entity must disclose its equity interest and demonstrate at least the following indicia of control to establish that it retains *de facto* control of the applicant:
(i) The entity constitutes or appoints more than 50 percent of the board of directors or management committee;
(ii) The entity has authority to appoint, promote, demote, and fire senior executives that control the day-to-day activities of the licensee; and
(iii) The entity plays an integral role in management decisions.
(2) The following rules apply for the calculation of certain interests.
(i) Ownership interests shall be calculated on a fully diluted basis; all agreements such as warrants, stock options, and convertible debentures will generally be treated as if the rights thereunder already have been fully exercised.
(ii) Partnership and other ownership interests and any stock interest equity, or outstanding stock, or outstanding voting stock shall be attributed as specified below.
(iii) Stock interests held in trust shall be attributed to any person who holds or shares the power to vote such stock, to any person who has the sole power to sell such stock, and to any person who has the right to revoke the trust at will or to replace the trustee at will. If the trustee has a familial, personal, or extra-trust business relationship to the grantor or the beneficiary, the stock interests held in trust will be

attributed to the grantor or beneficiary, as appropriate.
(iv) Non-voting stock shall be attributed as an interest in the issuing entity.
(v) Limited partnership interests shall be attributed to limited partners and shall be calculated according to both the percentage of equity paid in and the percentage of distribution of profits and losses.
(vi) Officers and directors of an entity shall be considered to have an attributable interest in the entity. The officers and directors of an entity that controls a licensee or applicant shall be considered to have an attributable interest in the licensee or applicant.
(vii) Ownership interests that are held indirectly by any party through one or more intervening corporations will be determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain and application of the relevant attribution benchmark to the resulting product, except that if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest.
(viii) Any person who manages the operations of an applicant or licensee pursuant to a management agreement shall be considered to have a controlling interest in such applicant or licensee if such person, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence:
(A) The nature or types of services offered by such an applicant or licensee;
(B) The terms upon which such services are offered; or
(C) The prices charged for such services.
(ix) Any licensee or its affiliate who enters into a joint marketing arrangement with an applicant or licensee, or its affiliate, shall be considered to have a controlling interest, if such applicant or licensee, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence:
(A) The nature or types of services offered by such an applicant or licensee;
(B) The terms upon which such services are offered; or
(C) The prices charged for such services.

(c) Bidding credits. A winning bidder that qualifies as a small business or a consortium of small businesses as defined in this section may use the bidding credit specified in § 1.2110(e)(2)(iii) of this chapter. A winning bidder that qualifies as a very small business or a consortium of very small businesses as defined in this section may use the bidding credit specified in § 1.2110(e)(2)(ii) of this chapter.

Appendix C
Geographic Areas for Licensing in the 747-762 MHz & 777-792 MHz Bands



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MCD 01/06/2000

SEPARATE STATEMENT OF COMMISSIONER SUSAN NESS

Re: Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168

I strongly support our action today, unleashing 30 MHz of prime spectrum for a variety of wireless services, including fixed and mobile Internet access. I am excited about the prospect of wireless alternatives to the local loop and/or Internet connections to mobile devices – as determined by a robust marketplace. Our decision best balances the needs of these competing demands for the same spectrum.

Our decision also recognizes the paramount importance of shielding the public safety bands from interference. Our further actions on the guard bands established in this order first and foremost should ensure the protection of public safety communications.

While I support the order, I would have preferred to act concurrently on the licensing and service rules for the 6 MHz of guard bands. These guard bands, which are adjacent to the public safety spectrum, also are adjacent to the spectrum allocated today. The licensing and service rules that will apply to the guard bands also may effect business strategies of those planning to bid on the 30 MHz. Potential bidders therefore should have the opportunity to factor into their business plans the rules governing the guard bands when considering participation in the auctions governing this newly available spectrum.

Despite my regret that we have not acted concurrently on the full 36 MHz of spectrum, I do look forward to the expeditious resolution of the subsequent actions the Commission will take on these new commercial allocations. I await with anticipation the new advanced wireless services that will be provided to consumers as a result of our action today, and to the competition that will result in the marketplace from the initiation of these new services.

SEPARATE STATEMENT OF COMMISSIONER HAROLD FURCHTGOTT-ROTH,
Approving in Part, Dissenting in Part

Re: Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168

As an initial matter, I wish to applaud the Wireless Bureau and the Office of Engineering and Technology for their tireless work in producing this item. Recent legislation greatly expedited our consideration of these issues. The Bureau and OET have made every effort to give full and fair consideration to the positions of all of the parties in order to reach the best policy results. By and large, I believe they have succeeded in crafting flexible and technology-neutral rules that will facilitate the prompt availability of significant spectrum for the highest valued uses.

The Order's approach to the primary spectrum blocks warrants particular praise. As the communications marketplace becomes increasingly competitive and dynamic, the Commission will be challenged to craft rules that allow for maximum flexibility in utilizing spectrum. This proceeding presented such a challenge. The sizing of spectrum blocks, the geographic licensing units, the aggregation and disaggregation rules, and the auction approach all have implications for the types of service providers that will succeed in the auction. Our task to balance the competing interests for the size and width of spectrum blocks has not been easy, but I believe we have done our best to preserve as many service and technology options as practicable in designing our rules for the primary spectrum blocks.

I must, however, part company with my colleagues on the item's approach to our statutory obligation to craft rules which protect public safety licensees from harmful interference. Rather than creation of so-called "guard bands," I would have been inclined to resolve our mandate by establishing strict interference limits with significant penalties for noncompliance. This approach is consistent with our statutory charge to "establish interference limits at the boundaries of the spectrum block and service areas."[338] I believe such a system would have appropriately left it to the marketplace to determine the appropriate uses of the spectrum and left to us the obligation to enforce rules that protect public safety licensees from interference. This approach would also have taken the Commission out of the difficult role of assessing the appropriate size and use of the guard bands. Nonetheless, there may well be some utility to the guard band concept as a basis for establishing boundaries and thresholds for interference. The creation of such bands alone may not have warranted a dissent.

However, even assuming "guard bands" are a necessary and appropriate convention, I am not convinced that a full 6 MHz is necessary to protect public safety. Indeed, it appears that 4 MHz or less would have provided a sufficient guard band to protect public safety licensees. Some parties have suggested that 6 MHz is necessary based on some other factors – such as the need for additional private spectrum or the need to create a viable market for "guard band

[338] 47 U.S.C. § 337 (d)(1).

spectrum." It may indeed be true that private users need additional spectrum or that 6 MHz is necessary to create a thriving market in guard band spectrum – but I find neither of these priorities in the statute. Nor do I believe these goals necessarily further the statute's purpose. Thus, to the extent I acquiesce the creation of guard bands at all, I would do so based only on an interference rationale and allocate only 4 MHz for such bands.

Today's item stops there. It only establishes the size of the guard bands. However, I feel compelled to express some concerns about some proposals that have gained currency in recent months about potential restrictions on the use of the guard bands. These items will be resolved in our Second Report and Order, but I wish to take this opportunity to state clearly my view of these pending issues.

I believe these guard bands should be open to all bidders willing to accept our interference limits on these bands. Although I believe the band manager concept is an innovative and potentially useful spectrum management tool, I cannot support proposals that would limit eligibility to a particular type of licensee. It seems to me the Commission should not be dictating business models to our licensees. In essence this limitation would say, if you want this spectrum, here is what your company needs to look like. I see no basis for such a proposed limitation. In addition, there may be many licensees who can use the guard bands for higher valued purposes than the band manager concept will allow. If a licensee can protect public safety, win the auction, and offer wireless Internet access to underserved areas, who are we to stop that higher-valued use based on some interest in testing a spectrum management tool?

In addition, the statute specifically requires that this spectrum be put to "commercial use." Whether band managers even qualify as a "commercial use" has been the subject of substantial debate. These doubts are only magnified by proposals to limit eligibility to "band managers" and preclude traditional "commercial" licensees who are prepared to comply with our interference limits.

I am also unconvinced by those who argue that we must limit guard band auction eligibility in order to "test" the band manager concept. In my view, the concept can be tested when band managers compete against other licensees in an open auction. You cannot truly test the concept by fixing the result, so that only band managers can win. Moreover, we should not in good conscience adopt any proposals that eliminate an opportunity for legitimate commercial entities to compete for spectrum simply because they fail to meet newly-minted criteria for a new non-statutory licensee, the band manager.

There are other questions that remain about these band manager proposals. First, it is not clear how a band manager is different from any other licensee that can lease its spectrum to other users. Second, how would a band manager fit into our traditional common carrier jurisprudence? What impact does that classification have on universal service? Although these regulatory issues may well be resolved, the band manager proposals create lingering doubts in my mind about the desirability of restricting eligibility to this class of new licensees.

My concerns about the various guard band proposals being considered in the Second Report and Order should not overshadow the overall strength of this item as an effort to permit

market forces to determine the most-highly valued use of this spectrum. American business and consumers stand to gain significant benefits from this flexible, technology-neutral approach.